



PATENT
19200-000041/US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Epke Bosma

Conf.: 4500

Appl. No.: 10/511,582

Group: 3643

Filed: October 18, 2004

Examiner: Son T. Nguyen

For: AUTOMATIC MILK SEPARATION

Docket No.: 19200-000041/US

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Alexandria, VA 22314

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APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. § 41.37

Madam:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellants submit the following:

I. REAL PARTY IN INTEREST:

The real party in interest in this appeal is DeLaval Holding AB. Assignment of the application was submitted to the U.S. Patent and Trademark Office on October 18, 2004, and recorded on the same date at Reel 016336, Frame 0840.

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II. RELATED APPEALS AND INTERFERENCES

No related appeals or interferences are known.

III. STATUS OF CLAIMS:

Claims 1-3 and 5-13 are pending. Claim 4 has been cancelled, and claims 8-13 are withdrawn. Claims 1-3 and 5-7 currently stand rejected and are the subject of this appeal. Claim 1 is an independent claim. The claims are rejected as follows:

1. Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite.
2. Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement.
3. Claims 1-3, 5, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pat 5,704,311 to Van den Berg ("Van den Berg") in view of Swedish Patent Publication 200000179 to Birk ("Birk").
4. Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Van den Berg in view of Birk and US Pat pub 2004/0168643 to Nilsson ("Nilsson").

Claims 1-3 and 5-7 are being appealed.

IV. STATUS OF AMENDMENTS:

Amendments after the Final Office Action of December 16, 2008 ("Final Office Action") were submitted on March 5, 2009 and refused entry. The

claims presented and argued below are in their form at the closing of prosecution as entered from Applicants' response of September 2, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER:

The following explains the subject matter set forth in each claim argued on appeal and each independent claim by way of example embodiments in the specification by page and line number, and in the drawings, if any, by reference characters only to satisfy 37 C.F.R. § 41.37(c)(1)(v). This concise explanation relies on example embodiments from the specification to describe the claims; however, the claims recite subject matter not limited to these example embodiments. Independent claim 1 is the only independent claim on appeal.

Claim 1

Example methods include methods of automatically milking animals, such as cows, and analyzing the quality of the milk drawn therefrom. The automated analysis may include a number of different tests by which to fully examine milk quality and handle milk based on the quality determination. Example methods may be implemented in automated milking facilities such as the milking facility illustrated in FIG. 1. Milking animals selectively and/or singly pass through an automated milking machine 100, where animals are milked. The collected milk may be separated into distinct populations based on the milk's teat of origin and stored in end unit 103. Several automatic testing apparatuses, such as an online cell counter 107 and/or conductivity measurer, serially test milk samples of each population as the milk is collected

and stored. Based on the testing analysis, the milk in a particular population may then be diverted and stored in one or more milk tanks 105/106 or disposed of. The preamble of claim 1, “a method for separating a first quantity of milk drawn from a milking animal in an automatic milking machine and a second quantity of milk drawn from the milking animal in said milking machine” describes this example setting for implementing example methods and may be found in the specification¹ at Page 4, line 24 through Page 5, line 29.

Example methods include milking an animal using an automatic milking machine. The machine may include several conventional features such as animal identification systems, teat cups, and automatic cleaning devices for automated milking. As shown in FIG. 1, the machine 101 may draw the milk from the animal through a milk meter 102 and store the milk in an end unit 103; the machine may also divert samples of the drawn milk to other analysis devices, such as a milk conductivity measurer and/or an online cell counter 107. The example step is further shown in FIG. 3 illustrating an example milking method flow chart including the “Draw Milk” step. The limitation of claim 1 “milking an animal using said automatic milking machine” reads on these examples of milk machine use and may be found in the specification at Page 4, line 24 through Page 5, line 19.

¹ Note that the page and line numbering of the specification as filed on October 18, 2004 is cited herein and does not necessarily correspond to the specification as published.

Example methods include an automated, two-phase mastitis analysis of the drawn milk. A sample of a particular milk quantity is tested for mastitis using a first test, such as a conductivity measurement. If the results of this first test indicate mastitis – such as by a high conductivity measurement - the milk quantity is subjected to a second test to verify mastitis. The second test measures a different symptom of mastitis, in order to avoid redundancy with the first test. These steps are shown in FIG. 3, decision steps “Measure Conductivity” and “Cell Count.” The limitation of claim 1, “measuring a first indicator of mastitis during said milking, and only if said first indicator of mastitis indicates mastitis, a second indicator of mastitis is performed, said second indicator of mastitis not based on a milk quality measured by the first indicator” read on these example steps and may be found in the specification at Page 7, line 27 through Page 8, line 22.

The second test used in example methods to verify mastitis is an online cell count, which measures somatic cells in the milk. As shown in FIG. 1, the cell count may be performed with an online cell-counter 107, with a high cell count verifying mastitis. Milk conductivity and somatic cell count are independent mastitis indicators, with the presence of one not substantially reflected in the measurement of the other, such that two mastitis-positive measurements offer independent verification of infection. The limitation of claim 1 “said second indicator of mastitis includes: analyzing at least a part of said first quantity of milk using an on-line cell counter for counting the

number of cells in said first quantity of milk” reads on this example cell counter and may be found in the specification at Page 8, lines 14-28.

If the second mastitis test returns mastitis-positive results, such as a somatic cell count above a mastitis threshold, the entire milk population from which the tested samples were drawn are separated into a specific container 106 for low-quality milk or disposed of. If the second mastitis test returns mastitis-negative results, the milk population is instead diverted into a different container 105 for higher-quality milk. This step of shown in FIG. 3 by elements “Divert to Second Container” and “Divert to First Container” based on the “Cell Count” decision. The limitation of claim 1 “operating a valve in dependence on the counted number of cells so that if the counted number of cells is below a first threshold, said first quantity of milk is collected in a first container, and if said counted number of cells is equal to or above said first threshold, said first quantity of milk is directed to a drain or a second container” reads on this example step and may be found in the specification at Page 8, lines 17-28.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL:

Appellant seeks the Board's review of the following rejections:

1. The rejection to claims 1-3 and 5-7 under 35 U.S.C. § 112, second paragraph as being indefinite.

2. The rejection to claims 1-3 and 5-7 under 35 U.S.C. § 112, first paragraph as failing to comply with the enablement requirement.
3. The rejection to claims 1-3 and 5-7 under 35 U.S.C. § 103(a) as being obvious.

Claims 1-3 and 5-7 rise and fall together.

VII. ARGUMENTS:

A. CLAIMS 1-3 AND 5-7 ARE REASONABLY CLEAR AND PRECISE.

Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 112, second paragraph as allegedly being indefinite. The Examiner finds the phrase “said second indicator of mastitis not based on a milk quality measured by the first indicator” added to claim 1 in Applicants’ response of September 2, 2008 confusing and unclear. See Final Office Action, p. 3. Applicants attempted to satisfy the Examiner’s need for clarification by amending the claims in Applicants’ response on March 5, 2009; however, the Examiner would not enter the claim amendments, alleging they were also indefinite. See Advisory Action dated March 20, 2009. Applicants respectfully submit and argue below that the rejections under § 112, ¶ 2 are based on an unreasonable interpretation of the claims and that a person skilled in the art would be able to clearly ascertain the content and bounds of the subject matter of claim 1.

1. Principles of Law

In order to comply with the definiteness requirement of 35 U.S.C. § 112, second paragraph, claims must recite subject matter with a reasonable degree of particularity and distinctness so as to clearly set out and circumscribe the claimed subject matter. See MPEP § 2173.02. Definiteness is analyzed in light of the content of the specification and figures, the teachings of the prior art, and how one of ordinary skill in the pertinent art would interpret the claims. Id. This analysis ensures that the claim apprises practitioners of the subject matter protected by the patent and thus serves the notice function of 35 U.S.C. § 112, second paragraph, by providing clear warning as to what constitutes infringement of the patent. See, e.g., Solomon v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed. Cir. 2000); MPEP § 2173.02; see also Metabolite Labs., Inc. v. Lab. Corp. of Am. Holdings, 370 F.3d 1354, 1366 (Fed. Cir. 2004) (applying an “insolubly ambiguous” standard for invalidating claims under § 112, ¶ 2 in litigation). Recently, in Ex parte Miyazaki, the Board of Patent Appeals and Interferences held that, even if the Examiner is able to give an alternate construction to a claim during prosecution, such construction must be **plausible** in order to render the claim indefinite. Ex parte Miyazaki, 89 USPQ2d 1207, 1211 (Bd. Pat. App. & Inter. 2008) (emphasis added). The Board of Patent Appeals and Interferences has plenary review of issues of definiteness and claim interpretation underlying the appealed rejections. 35 U.S.C. § 6(b).

2. Claim 1 is definite, and the Examiner's alternate construction of claim 1 is implausible.

Claim 1 recites in part, “measuring a first indicator of mastitis during said milking, and only if said first indicator of mastitis indicates mastitis, a second indicator of mastitis is performed, said second indicator of mastitis not based on a milk quality measured by the first indicator.” The plain language of the final phrase, “said second indicator of mastitis not based on a milk quality measured by the first indicator,” fairly requires that the second indicator does not measure and/or is not derived from a milk quality measured by the first indicator; that is, the second indicator is not based on a milk property measured by the first indicator. (This interpretation is hereinafter referred to as “the primary construction.”) The primary construction of the claim is consistent with the specification, which teaches independent quality measurements of conductivity and cell counts, for the first and second indicators respectively, in FIG. 3. *See also*, Specification, p. 7, l. 27 – p. 8, l. 22. Further, claim 1 has been interpreted and argued by Applicants during prosecution under only the primary construction. *See, e.g.*, Applicants’ response of September 2, 2008, p. 7 (arguing second indicator measuring an independent milk quality is not found in applied reference). Thus, persons skilled in the art, in view of the specification, references, prosecution history, and plain language of the claim, would routinely ascertain that claim 1 is subject to and delimited by the primary construction. Because claim 1 places

the public on clear notice of what constitutes infringement of the same, claim 1 is definite under § 112, second paragraph. See Solomon, 216 F.3d at 1379; MPEP § 2173.02.

The Examiner, however, posits an alternate construction of the final claim phrase: that the “second indicator” is only the *act of measuring*, not the measured quality itself. Under this construction, the claim is internally inconsistent because it requires a second act of measuring to be both 1) based on a milk quality of the first indicator, due to the if-then statement “only if said first indicator of mastitis indicates mastitis, a second indicator of mastitis is performed” and 2) not based on a milk quality of the first indicator due to the statement that the “second indicator of mastitis not based on a milk quality measured by the first indicator.” Citing this internal inconsistency, the Examiner finds the claim unclear and indefinite. See Final Office Action, p. 3.

It is, however, precisely because the Examiner’s alternate construction makes the claim internally inconsistent that the alternate construction is implausible. It is not reasonable or plausible to interpret claim 1 to be contradictory, particularly when the primary construction of the claim results in an internally consistent claim. Take, for example, a claim reciting “a device configured to trim trees so as to remove excess branches from the trees”; this claim would not be construed as claiming a device that hangs ornaments and tinsel on the trees. An alternate definition of “trim” would make the claim internally inconsistent. The example claim would thus not be indefinite just because an *implausible* alternate construction existed; rather, an alternate

plausible definition must exist to establish indefiniteness. See Miyazaki, 89 USPQ2d at 1211. Yet these are the circumstances under which the Examiner finds claim 1 indefinite – only by adopting the Examiner's alternate construction does the claim stop making sense.

Moreover, aside from making the claim internally inconsistent, the Examiner's alternate construction is further implausible because it is not consistent with the specification or figures and was never argued during prosecution. As discussed above, only the primary construction is consistent with the specification and prosecution of this application. Most tellingly, not even the Examiner uses the indefinite alternate construction in applying references to rejection the claims. See Final Office Action, p. 4 (alleging “second indicator” phrase is disclosed because *measured yields in applied reference are independent*). Thus, every source informing the construction of claim 1 is in disagreement with the alternate construction that is the basis of the indefiniteness rejection.

In sum, the plain language of the claim, the specification, references, and prosecution history are univocal that the claim 1 is subject to the primary construction: the second indicator does not measure and/or is not derived from a milk quality measured by the first indicator. The Examiner's alternate construction is at odds with every one of these sources used in the definiteness analysis. See MPEP § 2173.02. As such, the Examiner's alternate construction is implausible and cannot be a basis for finding claim 1 indefinite. See Miyazaki, 89 USPQ2d at 1211. Claims 2, 3, and 5-7 are rejected under §

112, ¶ 2 only because of their dependency upon claim 1. Reversal of the rejections under 35 U.S.C. § 112, second paragraph to claims 1-3 and 5-7 is respectfully requested.

B. CLAIMS 1-3 AND 5-7 ARE ENABLED IN VIEW OF THE APPLICATION AS FILED.

Claims 1-3 and 5-7 stand rejected under 35 U.S.C. § 112, first paragraph for allegedly failing to comply with the enablement requirement. The Examiner finds that the phrase “said second indicator of mastitis not based on a milk quality measured by the first indicator” added to claim 1 in the September 2, 2008 Amendment is not disclosed in the specification in such a way as to enable one skilled in the art to make or use the subject matter of the phrase. See Final Office Action, pp. 2-3. Applicants respectfully submit and argue below that a person skilled in the art would, upon reading the specification, be able to practice the subject matter of claim 1 under a reasonable construction of that claim.

1. Principles of Law

The enablement analysis turns on whether the subject matter of the full scope of the claim is reasonably enabled. See Liebel-Flarsheim Co. v. Medrad, Inc., 481 F.3d 1371, 1378 (Fed. Cir. 2007). Accordingly, the first analytical step of the enablement inquiry requires that the examiner determine exactly what subject matter is encompassed by the claims. See AK Steel Corp. v. Sollac, 344 F.3d 1234, 1244 (Fed. Cir. 2003). The examiner should determine

what each claim recites and what the subject matter is when the claim is considered as a whole, not when its parts are analyzed individually. MPEP § 2164.08(b). Further, the level of enablement should bear a reasonable correlation to the determined scope of the claims. *See, e.g., In re Fisher*, 427 F.2d 833, 839 (C.C.P.A. 1970); MPEP § 2164. The Board of Patent Appeals and Interferences has plenary review of issues of enablement and claim scope underlying the appealed rejections. 35 U.S.C. § 6(b).

2. The specification enables the full scope of claim 1 when reasonably interpreted.

Claim 1, under the primary construction discussed in the preceding section, is clearly enabled, and the Examiner does not allege otherwise. At least FIG. 3 and the specification as filed at page 7, line 27 through page 8, line 22, teach how to measure two different aspects of the same milk if a first aspect indicates mastitis. The example method of measuring milk conductivity and then measuring cell count if the conductivity is mastitis-positive disclosed therein does this. A person skilled in animal husbandry would be able to discern any required procedures for executing this step that are not explicitly mentioned in the specification. Thus, claim 1 is reasonably enabled for its full scope under a plausible interpretation of the claim.

However, the Examiner bases the non-enablement rejection of claim 1 on the alternate construction, also discussed in the preceding section, which would require the “second indicator” to be a second act of measuring that is both 1) based on a milk quality of the first indicator, due to the if-then

statement “only if said first indicator of mastitis indicates mastitis, a second indicator of mastitis is performed” and 2) not based on a milk quality of the first indicator due to the statement that the “second indicator of mastitis not based on a milk quality measured by the first indicator.” See Final Office Action, pp. 2-3. Of course a person skilled in the art cannot execute this alternate construction – it requires two contradictory actions.

By the same token, a person skilled in the art would never conclude that the alternate construction is within the scope of claim 1. As discussed above, the alternate construction is a contradictory reading of the claim that finds no support in the claim’s plain language, specification, figures, or prosecution history. Thus, because the Examiner’s interpretation of claim 1 is unreasonable, the Examiner has erred in determining exactly what subject matter falls within the claim scope and must be enabled. See AK Steel Corp., 344 F.3d at 1244; MPEP § 2164.08(b).

Because the primary construction of claim 1 is within the full scope of claim 1 and is enabled, claim 1 is enabled. Claims 2, 3, and 5-7, which are rejected only by virtue of their dependency on claim 1, are equally enabled under § 112, ¶ 1. Reversal of the rejection to claims 1-3 and 5-7 under 35 U.S.C. § 112, first paragraph is respectfully requested.

C. THE CLAIMS ARE NOT OBVIOUS OVER VAN DEN BERG IN COMBINATION WITH ANY OTHER REFERENCE.

Claims 1-3, 5, and 7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pat 5,704,311 to van den Berg ("van den Berg") in view of Swedish Pat 200000179 to Birk ("Birk"). Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over van den Berg in view of Birk and in further view of US Pat Pub 2004/0168643 to Nilsson ("Nilsson"). Applicants respectfully submit and argue below that these references, alone or combined, do not teach or suggest every claim limitation, such that the Examiner has not accounted for the differences between the claims and the references as required under § 103.

1. Principles of Law

In order to set forth a prima facie case of obviousness under 35 U.S.C. § 103(a), the Examiner must make the factual determinations set forth in Graham v. John Deere Co., 282 U.S. 1, 17 (1966), including identifying differences between the claimed invention and the prior art. Each limitation of a claim must be given weight in this determination in order to determine whether the "subject matter as a whole would have been obvious." 35 U.S.C. § 103(a). In combining references and accounting for differences between a claim and the applied art, the Examiner must provide "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR Int'l Co. v. Teleflex, Inc., 127 S.Ct. 1727, 1741 (2007). The

Board of Patent Appeals and Interferences has plenary review of issues of obviousness and the teachings of the applied references underlying the appealed rejections. 35 U.S.C. § 6(b).

2. Birk does not disclose the cell counter for which Birk alone is applied.

With regard to claim 1, the Examiner alleges that van den Berg teaches each and every feature of this claim, with the exception of the “on-line cell counter for counting the number of cells” and first and second containers, for which only Birk is applied. Applicants respectfully submit that Birk does not teach or suggest a “second indicator of mastitis includ[ing] analyzing at least a part of said first quantity of milk using an **on-line cell counter for counting the number of cells.**” Rather, Birk very briefly suggests only a measuring element that may be **flow sensor** or a **floating body** whose buoyancy indicates the quality of milk. See Birk, p. 4, ll. 2-6; p. 5, ll. 15-28; FIG. 1, element 25. A flow sensor and a floating body are not “on-line cell counters” and cannot measure cell counts of milk. Where Birk describes cell counts as an indicator of mastitis, it does not disclose any apparatuses capable of doing so, such as an on-line cell counter. See Birk, p. 4, ll. 8-14. Thus, Birk fails to teach or suggest the on-line cell counter of claim 1, which van den Berg also lacks.

3. Van den Berg does not disclose the second indicator for which Van den Berg alone is applied.

Further, with regard to claim 1, the Examiner alleges that only van den Berg teaches that the **second indicator** of mastitis is “**not based on a milk**

quality measured by the first indicator.” For example, the first indicator may measure milk conductivity and then the second indicator may measure cell count without measuring conductivity or calculating cell count from conductivity at all. Applicants respectfully submit that van den Berg fails to teach or suggest a second indication of mastitis, let alone one based on an independent milk quality. Instead, van den Berg teaches only a conductivity test for determining mastitis. See van den Berg, Col. 8, ll. 25-28, 47-51. Van den Berg further teaches a milk flow cutoff threshold that is based on the results of the conductivity test. See van den Berg, Col. 8, l. 51 – Col. 9, l. 13. The flow cutoff threshold is **not a second indicator of mastitis**, and, even if van den Berg did use the flow cutoff as an indicator of mastitis, the cutoff is explicitly **based on the quality measured by the conductivity test**. See van den Berg, Col. 9, ll. 3-5. Thus, van den Berg does not teach or suggest the second indicator, let alone one measuring a second distinct milk quality as recited in claim 1.

Because van den Berg, alone or in combination with Birk, does not teach or fairly suggest multiple elements of claim 1, these references cannot anticipate or render obvious claim 1. Claims 2, 3, 5, and 7 are allowable at least for depending from an allowable base claim. Nilsson does not cure, nor does the Examiner apply Nilsson for curing, the disclosure and suggestion deficiencies of van den Berg and Birk, discussed above. Particularly, Nilsson is silent with regard to an on-line cell counter and two independent mastitis

indicators. Because van den Berg, alone or in combination with Birk and Nilsson, fails to teach or suggest each and every feature of claim 1, these references cannot anticipate or render obvious claim 1. Claim 6 is allowable at least for depending from an allowable base claim. Reversal of the rejections to claims 1-3 and 5-7 under 35 U.S.C. § 103(a) is respectfully requested.

D. CONCLUSION

In light of the above arguments, the Board is respectfully requested to review and reverse the rejections to claims 1-3 and 5-7 in connection with this application.

The Commissioner is authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 41.20(b), particularly, Appeal Brief fees.

Respectfully submitted,
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VIII. APPENDIX A - Listing of claims 1-3 and 5-7 on appeal:

1. A method for separating a first quantity of milk drawn from a milking animal in an automatic milking machine and a second quantity of milk drawn from the milking animal in said milking machine, comprising:

- milking an animal using said automatic milking machine,
- measuring a first indicator of mastitis during said milking, and only if said first indicator of mastitis indicates mastitis, a second indicator of mastitis is performed, said second indicator of mastitis not based on a milk quality measured by the first indicator, said second indicator of mastitis includes:
 - analyzing at least a part of said first quantity of milk using an on-line cell counter for counting the number of cells in said first quantity of milk, and
 - operating a valve in dependence on the counted number of cells so that if the counted number of cells is below a first threshold, said first quantity of milk is collected in a first container, and if said counted number of cells is equal to or above said first threshold, said first quantity of milk is directed to a drain or a second container.

2. The method according to claim 1, wherein the step of operating a valve further comprises the step of

- collecting said first quantity of milk in a third container if the counted number of cells are above a third threshold but below said first threshold and collect said first quantity of milk in said first container if said counted number of cells are below said third threshold, thereby collecting milk of a first superior quality in said first container, milk of a second quality in said third container and milk of a third quality is directed to said drain or collected in said second container.

3. The method according to claim 1, wherein said first indicator of mastitis is one indicator, or a selection of multiple indicators, selected from a group of indicators comprising: the conductivity of said first quantity of milk, the NAgase value of said first quantity of milk, the Urea value of said first quantity of milk, the temperature of said first quantity of milk, the milk flow from said milking animal or the milk quantity from a teat of said milking animal.

5. The method according to claim 1, wherein said first quantity of milk drawn from one milking animal is collected in an end unit for the duration of performing the somatic cell count.

6. The method according to claim 1, wherein said first quantity of milk is collected from a first teat of a milking animal and said second quantity of milk is collected from a second teat of said milking animal.

7. The method according to claim 1, wherein said first quantity of milk is collected from a first milking animal and said second quantity of milk is collected from a second milking animal.

**IX. APPENDIX B – EVIDENCE SUBMITTED UNDER CFR 1.130, 1.131,
OR 1.132**

None.

**X. APPENDIX C – DECISIONS RENDERED BY THE COURT OR THE
BOARD IN RELATED APPEALS AND INTERFERENCES SECTION**

None.